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Task Force on Education Statistics

Note by the Secretary-General

In accordance with a request of the Statistical Commission at its thirty-ninth session,** the Secretary-General has the honour to transmit the report of the Task Force on Education Statistics, convened by the Institute for Statistics of the United Nations Educational, Scientific and Cultural Organization (UNESCO). The report reviews the main measurement frameworks currently being used in the field of education for purposes of data collection at the international, regional or national levels and how they affect the production and use of statistics. The review also looks at coordination mechanisms among relevant agencies with respect to different stages of the statistical production and dissemination cycle. In addition, the report proposes possible ways to improve coordination, data collection and production and dissemination.

The Commission may wish to express its views on the findings, conclusions and recommendations for future work in this area.

* E/CN.3/2009/1.

** See *Official Records of the Economic and Social Council, 2008, Supplement No. 24* (E/2008/24), chap. I.B., decision 39/102.

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Report of the Task Force on Education Statistics[1]

A. Introduction

1. At its thirty-eighth session, the Statistical Commission, having considered the report of Statistics Canada on education statistics (E/CN.3/2007/2), to set up a task force on education statistics comprising interested countries and agencies and asked the Institute for Statistics of the United Nations Educational, Scientific and Cultural Organization (UNESCO) to be the convener of the Task Force.[2] At the thirty-ninth session of the Statistical Commission, the Task Force presented a progress report (E/CN.3/2008/3) and the Commission requested the UNESCO Institute for Statistics, on behalf of the Task Force, to report to it at its next session.[3]

2. The present report[4] summarizes a review undertaken by the Education Task Force in order (a) to examine conceptual frameworks guiding the collection and reporting of education statistics in international agencies and national offices and assess the need for a worldwide framework guiding the collection of education data; (b) to survey existing coordination mechanisms among relevant agencies and propose solutions to avoid duplication and to reduce country response burden; (c) to identify potential gaps relative to emerging policy demands, as identified by international organizations or national authorities; and (d) to provide recommendations on possible approaches to fill these gaps and to improve international coordination. The review integrates the findings from a document review, interviews with members of international organizations and the responses to a survey sent to Task Force members (see the annex to the present report). The present document describes the major issues identified in the review, and summarizes the recommendations approved by the Task Force. The complete report is presented as a background document.

B. Statistical frameworks

3. The Task Force examined the degree to which conceptual frameworks are used by international agencies and national offices to guide the collection and reporting of education statistics. The frameworks reviewed include those of international agencies with mandates to coordinate and utilize international statistical information and national agencies with mandates, unique to each country, to utilize and generate national statistics and indicators. These agencies differ in the degree to which their operations are influenced by legislation (United States of America, Eurostat), macrostatistical agency operations (Russian Federation), historical precedent (France) or goals established to monitor particular educational objectives (the United Nations Children's Fund (UNICEF), Eurostat and the UNESCO Institute for

[1] The Task Force was composed of Australia, Brazil, Canada, Cuba, France, the Russian Federation, Sri Lanka, Eurostat, the UNESCO Institute for Statistics and the United Nations Statistics Division.

[2] See *Official Records of the Economic and Social Council, 2007, Supplement No. 24* (E/2007/24), chap. I.B, decision 38/101.

[3] See *Official Records of the Economic and Social Council, 2008, Supplement No. 24* (E/2008/24), chap. I.B, decision 39/102.

[4] Prepared by Thomas Smith and Stephen Heyneman of Vanderbilt University (United States of America), consultants to the Task Force.

Statistics). The frameworks used by Australia, Brazil, Canada and the Organization for Economic Cooperation and Development (OECD) reflect an underlying conceptual model for organizing statistics (e.g., inputs, processes, outputs and outcomes), yet decisions about what data to collect in any given data collection can be influenced by the data needs of policymakers.

4. The framework for education and training statistics of the Australian Bureau of Statistics[5] establishes definitions of learning activities and provides a structured approach to classifying statistics by focusing on (a) an underlying model that identifies various elements (context, participant, non-participants, providers, resources, activities and outputs and outcomes), (b) a multilevel structure (individual, organization, system) and (c) both activity and industry perspectives. The Australian Bureau of Statistics reports that this framework has been a useful tool for identifying gaps and overlaps and determining statistical priorities for further development, as well as assessing data comparability across data collections. Members of the Task Force agreed that the Australian framework represents a useful guide for countries wishing to develop their own national frameworks.

5. The review found variation across countries in the formalization of frameworks for collecting education data; the extent to which the frameworks focus on concepts versus indicators or specific measures; and the different uses of the data collected, e.g., management, benchmarking, analysis or evaluation. From an international perspective it is important to distinguish between a policy framework, which represents a model for how educational constructs fit together (e.g., the OECD matrix of outcomes, policy levers and antecedents by system, schools, classrooms and learners) and a statistical framework, which turns the concepts into measures and actual data and indicators (e.g., the International Standard Classification of Education Programmes). The agencies interviewed felt it critical that there be a shared statistical framework across organizations, as definitions and classification schemes need to be compatible across international and national data collections. There was less consensus around the need for a common conceptual framework, as each organization has its own constituencies (member States, stakeholders) and different policy goals.

C. Coordination mechanisms

6. The review examined existing coordination mechanisms among international organizations in collecting, processing and reporting education data and identified areas where further collaboration could help to avoid duplication and reduce country response burden.

7. The UNESCO Institute for Statistics, OECD and Eurostat collaborate extensively on a data collection which covers participation and completion rates and the costs and resources of education. Participating countries submit data to a unique address that all agencies are able to access. This reduces the burden on countries and ensures that the international organizations are working with the same "version" of submitted data. While controls are in place to ensure that the participating agencies

[5] "Measuring Learning in Australia: A Framework for Education and Training Statistics, Australia, 2003", available at www.abs.gov.au.

are notified if a country changes or updates submitted data, there is a need for better maintenance of metadata indicating when and why changes to data were made.

8. As agencies are on different publication timelines, edits to data during the review process of one organization can end up contradicting data that other organizations have already published. Further, different publication schedules and different sources of population data can lead to the reporting of different measures when data from outside the joint data collection (e.g., financial data from the International Monetary Fund) are updated. Better tracking and documenting of these changes would help both agencies and countries to understand differences in reported indicators.

9. All of the organizations interviewed and countries surveyed noted the continued challenges of applying the International Standard Classification of Education Programmes to the classification of education programmes and related data (enrolments, completions, staffing and finance), and of classifying and reporting educational attainment data. To address some of these issues, the UNESCO Institute for Statistics has begun a review of the 1997 edition of the International Standard Classification, in collaboration with OECD and Eurostat, to examine current definitions and classification criteria and determine if revisions or new conceptual definitions are necessary. The Institute is in the process of forming a global technical advisory panel to guide the review strategy, take part in regional consultations, assist in targeting research and provide inputs for the preparation of the recommendations.

10. OECD, Eurostat, and the UNESCO Institute for Statistics also coordinate, to a lesser extent, their sample survey and assessment work. For example, the European Commission is contributing funding (directly to countries) and attending advisory meetings for both the OECD teaching and learning international survey and the programme for the international assessment of adult competencies. The UNESCO Institute for Statistics has supported non-OECD countries in analysing data of the programme for international student assessment and jointly published an analysis of results of the assessment with OECD.

11. OECD and the International Association for the Evaluation of Educational Achievement compete for countries' participation in and funding of their student assessments. The two kinds of studies differ in their purposes, conceptual frameworks and sampling plans: the International Association focuses on content taught to students in particular grades while OECD is concerned with broader literacy and life skills among an age cohort near the end of secondary schooling. There were consultations between OECD and the International Association as to why countries differed in performance rankings on the programme for international student assessment and the trends in international mathematics and science study. A number of countries remain concerned about the costs and data collection burden associated with participating in both studies.

12. The UNESCO Institute for Statistics and the United Nations Statistics Division exchange census literacy data biannually in order to improve coverage on both sides. The two organizations check and "process" one another's data and advise of any errors or inconsistencies. The UNESCO Institute for Statistics sends its final data tables (including data that it collects on literacy and educational attainment) each year to the Statistics Division and the Population Division of the Department of Economic and Social Affairs for validity checking across agencies. Definitions

and classifications for education statistics in the Statistics Division's *Principles and Recommendations for Population and Housing Censuses*[6] are based on definitions provided by the UNESCO Institute for Statistics. National accommodations to these recommendations are collected as metadata. There could be a role for the Institute in providing technical assistance and verification of reporting practices. For reporting of enrolment and attainment data from the census, national statistical offices are left to map their national programmes to the International Standard Classification of Education Programmes on their own. Although national mappings exist, their implementation is not controlled nor monitored. There is no critical review of this practice, which could lead to comparability problems.

13. Problems of coordination and comparability of data have generally been greater among organizations working with less developed countries, where the UNESCO Institute for Statistics and others (e.g., the World Bank, UNICEF, individual donor agencies) maintain separate data collections. One example is the use by UNICEF of school attendance measures based on household survey data that produce different results compared to administrative data and national estimates. The UNESCO Institute for Statistics, jointly with UNICEF, published a report on out-of-school children and has sought to establish a methodology which could combine data sources, although this has proven to be a particularly complex issue that has yet to be resolved.

14. One of the main country concerns in the reporting of education indicators published by international organizations involves the use of population projections from the Population Division instead of country-level estimates, which can lead to differences in population-based indicators such as enrolment rates. A Population Division task force is currently looking into strengthening the Division's population estimates. The UNESCO Institute for Statistics is contributing a technical paper that looks at issues related to education data. The task force last reported to the Committee for the Coordination of Statistical Activities in September 2008.

D. Data collection burden on countries

15. In the survey that was distributed to Task Force members and selected other countries, costs for adhering to international requirements were the greatest concern. The examples given, however, mainly concerned costs related to participating in the OECD international indicators of education systems project and the country-level costs for making estimations or special manipulations because national data do not clearly align with international definitions. Although several lower-income countries report having to provide similar data to multiple international organizations in a given year, issues of overlapping responsibility and burden are difficult to quantify because currently available data from one organization may not meet the specific data needs of another organization. While publishing data on accessible websites has helped to alleviate some of the need to collect duplicate data, better coordination across organizations regarding planned and ad hoc data collections could help to reduce country burden.

[6] United Nations publication, Sales No. E.98.XVII.8.

E. Conclusions and recommendations

16. The Task Force makes recommendations based on the framework mapping exercise and analysis of the interview and survey responses, while taking into account feasibility, relative importance for reducing country reporting burdens and improved data comparability.

1. Statistical frameworks

17. There has been a significant improvement in the quality and coverage of educational statistics in the last decade. Much of this improvement is a result of collaboration among international organizations and national representatives and experts on definitions (e.g., expenditure on education from public sources), concepts (importance of measuring enrolment by single year of age), methodologies (e.g., mapping programmes to the International Standard Classification of Education Programmes) and "integrated" data collection across agencies (e.g., the joint UNESCO Institute for Statistics-OECD-Eurostat data collection, collaboration in respect of assessments). These efforts to build a cross-national statistical framework are essential for the comparability of education data collected from different countries and reported by different agencies. While there are areas where increased collaboration and coordination are needed, the International Standard Classification and existing definitions and classification schemes of the joint data collection and the UNESCO Institute for Statistics are the foundation for comparability and should be regularly revisited and renewed.

18. There is less need for a uniform, cross-national conceptual framework that would dictate areas of data development. Currently, international organizations work with a variety of conceptual frameworks — ranging from goals that need to be monitored to models attempting to explain relationships between inputs and outcomes — that meet the different policy needs of the organizations, their member States and stakeholders. It is critical, however, that when a single organization begins work translating elements of its conceptual framework (e.g., lifelong learning) into its statistical framework (how to measure lifelong learning), international organizations need to collaborate so that the resulting definitions, concepts and methodologies meet the needs of various stakeholders and lead to compatibility of measures across agencies. While the Task Force recognizes the value of conceptual frameworks at both the national and international level for improving education statistics (e.g., identifying gaps, anticipating emerging issues), a single conceptual framework that applies to all organizations is not recommended.

2. Coordination among international agencies

19. Collaboration and coordination among international organizations in data collection, processing and reporting, particularly Eurostat, OECD and the UNESCO Institute for Statistics, is stronger now than ever. Nevertheless, there are instances where international agencies (a) request similar data in uncoordinated requests; (b) lack coordination in data collection schedules; (c) use terms with different definitions; and (d) are handicapped by differing internal regulations pertaining to validation and the mechanisms of data use. This requires a rethinking in order to meet future challenges. The Task Force makes specific recommendations on issues of data sharing, the timing and sequencing of publications, the dissemination of data and access to them, as well as a recommendation to constitute a task force on the

International Standard Classification of Education Programmes and an inter-agency panel on education statistics.

20. The Task Force recommends that the UNESCO Institute for Statistics create an expert group on the International Standard Classification for reaching consensus on developing methodology, updating definitions, providing country support (e.g., organizing peer reviews) and developing procedures for mapping educational attainment data to the International Standard Classification (e.g., data gathered through population censuses, labour force or adult education surveys). There is already considerable collaboration among OECD, Eurostat and the UNESCO Institute for Statistics on the International Standard Classification, but it would be useful to formalize these relationships and bring on board other international organizations such as the United Nations Statistics Division and UNICEF that collect data on educational participation and attainment. As the International Standard Classification is the key statistical framework for translating national data into internationally comparable categories, sustained focus on improving its applicability and implementation is warranted.

21. The Task Force also recommends the creation of an intersecretariat working group on education statistics. Led by the UNESCO Institute for Statistics, this group would work to maintain and promote the development of international standards, push to reduce duplicative efforts across international agencies, set global strategies for data development, promote the participation of non-OECD countries in international data collection efforts, raise the profile of education statistics, develop collaborative strategies for improving the quality of education statistics in non-OECD countries through capacity-building activities, ensure efficient data exchange among agencies and support the allocation of resources to statistics at the institutional level. While a number of agencies already cooperate informally across a range of these functions, it would be useful to formalize this collaborative structure and expand its membership.

22. One task of this intersecretariat group could be to improve cooperation among agencies and countries for the purpose of reducing reporting burdens (e.g., from ad hoc requests when data are available in another organization) and reducing inconsistencies by setting standards for uniform application of statistical frameworks (e.g., to harmonize data collection methodology between household survey and administrative data collection).

23. Another important task of the intersecretariat group would be to better coordinate fundraising for and the implementation of statistical capacity-building as it relates to education. Current efforts by national and international agencies to improve statistical systems in developing countries are often uncoordinated, leading to inconsistent and inefficient initiatives. Formal collaboration among organizations to coordinate funding for activities at the country or regional level could help improve the targeting of resources.

24. While it is beyond the scope of this review to recommend particular agencies for this group or set a more specific agenda for collaboration, a formally organized body with a procedure for agenda setting and resource allocation could help to improve the quality of education statistics cross-nationally and reduce country burden.

F. Points for discussion

25. **The Statistical Commission may wish to endorse the recommendations of the Task Force:**

(a) **To set up an expert group on the implementation of the International Standard Classification of Education Programmes;**

(b) **To establish an intersecretariat working group on education to improve coordination mechanisms, especially to reduce country reporting burden and to promote the development of international standards.**

Annex

Methodology

1. In October 2007, the UNESCO Institute for Statistics commissioned Professors Thomas Smith and Stephen Heyneman of Vanderbilt University in the United States of America to prepare a review for the Task Force on Education Statistics established by the United Nations Statistical Commission.

2. To that end the consultants collected and analysed conceptual frameworks and other related documents that the organizations use to guide the collection of education data. They also interviewed individuals in international organizations regarding their coordination of education statistics. Representatives of OECD were interviewed on 1 October 2007 and representatives of the statistical office of the European Union (Eurostat) on 2 October 2007. Interviews with representatives of the World Bank were conducted on 3 December 2007 and with representatives of UNICEF, UNDP and the Statistics Division in January 2008. In addition, current and former officials of the UNESCO Institute for Statistics were interviewed and written questions were submitted regarding additional issues that arose as the report was being developed.

3. The consultants also drafted a survey for Task Force members and selected other countries (determined in collaboration with the UNESCO Institute for Statistics) to examine the education data collection activities in which countries participate, including those sponsored by UNESCO itself and other United Nations agencies, OECD, Eurostat, the World Bank, regional development banks, regional organizations such as the Asia-Pacific Economic Cooperation, the Economic Commission for Latin America and the Caribbean and the Association of Southeast Asian Nations, bilateral agencies and others.

4. The survey was intended to uncover areas where these data collection activities are coordinated well, where they may overlap and where there may still be gaps, and to give countries the opportunity to make suggestions and/or recommendations for improving the current practice of collection and dissemination of cross-national educational statistics. The survey was initially sent to Task Force members in Australia, Brazil, Canada, Cuba, France, the Russian Federation and South Africa by e-mail on 25 November 2007. On 20 December, a letter from the Director of the UNESCO Institute for Statistics was sent by e-mail and fax, along with the survey, to ministers of education and chief statisticians in selected UNESCO member countries to explain the goals of the Task Force and to invite them to participate. The countries invited included Chile, China, Costa Rica, India, Indonesia, the Islamic Republic of Iran, the Libyan Arab Jamahiriya, Nigeria, Qatar, Uganda, the United Kingdom and the United States. Polite reminders were sent to e-mail contacts in December 2007 and January 2008. Responses were received from Australia, Brazil, Canada, Cuba, France, the Russian Federation, Sri Lanka, the United Kingdom and the United States.

5. A draft of the review was presented to the Task Force by Professor Smith at a meeting hosted by Eurostat on 4 and 5 September in Brussels. On the basis of input from the Task Force, additional information on data burden was sought through a follow-up survey of Task Force members. Representatives of Brazil and Canada submitted responses.